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EXAMINER	
ROMAN, LUIS ENRIQUE	
ART UNIT	**PAPER NUMBER**
2836	

DATE MAILED: 11/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/692,298	MECHANIC ET AL.	
	Examiner	Art Unit	
	Luis Roman	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *08/02/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicant amendment filed on 08/02/06 has been entered. Accordingly claims 2-13, 16, 17, 19-26, 29-33 have been kept original, claims 1, 14, 15, 18, 27, 28, 34 have been amended and no claims have been cancelled. No new claims were added. It also included remarks/arguments.

The claim Rejections of claims 3, 6, 8, 17, 19, 21 under 35 U.S.C. 112 1st paragraph has been withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 14, 15 & 27 are rejected under 35 U.S.C. §103(a) as being unpatentable over Lawrence (US 5179490) in view of Kwak (US 5475347).

Regarding claim 1 Lawrence discloses a protective circuit having hot (Fig. 2 element 34), neutral (Fig. 2 element 36), and ground (Fig. 2 element 38) leads arranged to be placed between corresponding utility hot, neutral, and ground leads of a power utility outlet of a multi-phase power distribution network and corresponding device hot, neutral, and ground leads of at least one electrical and/or electronic device (Fig. 2 element 40), the protective circuit responding to abnormal power conditions incoming from the power utility outlet and reducing or eliminating ground noise or noise between the ground and neutral leads transmitted to the devices.

Lawrence discloses several inductors and capacitors acting as filters although not specifically disclosing the protective circuit comprising: a neutral-ground voltage surge protection/filtration circuit including at least one LC (Fig. 2 elements 96, 98, 106, 108) filter circuit component having at least one inductive component (Fig. 2 element 88) disposed in the circuit ground lead; and at least one capacitor (Fig. 2 element 96, 98) connected between the circuit neutral and circuit ground leads after the inductor towards the device, where the at least one the LC filter circuit component is adapted to reduce or eliminate ground noise or noise between ground and neutral leads transmitted to the devices.

Kwak teaches the usage of LC filters to reduce or eliminate ground noise (Abstract & Fig. 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Lawrence device with the Kwak teachings because it provides a noise filter which simplifies the connection structure of the ground inductor to associated lead wires (Col. 2 lines 5-9).

Regarding claim 14 Lawrence discloses the protective circuit of claim 1.

Lawrence further discloses wherein the neutral-ground voltage surge protection/filtration circuit component includes a resistor (Fig. 2 element 106, 108).

Kwak further teaches a plurality of LC filter circuit component, each LC filter circuit including at least one inductor disposed in the circuit ground lead and at least one capacitor connected between the circuit neutral and circuit ground leads after the inductor toward the device, where the LC filter circuits are adapted to reduce or eliminate ground noise or noise between ground and neutral leads transmitted to the devices (Abstract & Fig. 5).

Regarding claim 15 Lawrence discloses a protective circuit having hot (Fig. 2 element 34), neutral (Fig. 2 element 36), and ground (Fig. 2 element 38) leads arranged to be placed between corresponding utility hot, neutral, and ground leads of a power utility outlet of a power distribution network and corresponding device hot, neutral, and

ground leads of electrical and/or electronic devices (Fig. 2 element 40), the protective circuit responding to abnormal power conditions incoming from the power utility outlet and reducing or eliminating ground noise or noise between the ground and neutral leads transmitted to the devices, the protective circuit comprising: a hot-neutral voltage surge protection circuit (Fig. 2 elements 84, 94, 104, 96, 106) component connected between the circuit hot and neutral leads, a hot-ground voltage surge protection circuit (Fig. 2 elements 88, 98, 108, 96, 106) component connected between the circuit hot and ground leads; and neutral-ground voltage surge protection/filtration circuit (Fig. 2 elements 86, 96, 106, 94, 104) component connected between the circuit neutral and circuit round leads.

Kwak further teaches including at least one LC filter circuit component having at least one inductor disposed in the circuit ground lead, at least one capacitor connected between the circuit neutral and circuit ground leads after the inductor and a resistor (the resistor is from Lawrence Fig. 2 elements 108, 106) adapted to discharge the capacitor, where the at least one the LC filter circuit component is adapted to reduce or eliminate ground noise or noise between ground and neutral leads transmitted to the devices and to reduce or eliminate ground leakage currents (Abstract & Fig. 5).

Regarding claim 27 Lawrence discloses the protective circuit of claim 15.

Lawrence further discloses wherein the neutral-ground voltage surge protection/filtration circuit component includes a resistor (Fig. 2 elements 106, 108).

Kwak further teaches a plurality of LC filter circuit component, each LC filter circuit including at least one inductor disposed in the circuit ground lead and at least one capacitor connected between the circuit neutral and circuit ground leads after the inductor, where the LC filter circuits are adapted to reduce or eliminate ground noise or noise between ground and neutral leads transmitted to the devices and to reduce or eliminate ground leakage currents (Abstract & Fig. 5).

Claims 2, 3, 16, 17, 18, 19, 20, 21, 22, 23, 24 & 25 are rejected under 35 U.S.C. §103(a) as being unpatentable over Lawrence (US 5179490) in view of Kwak (US 5475347) and Winch et al. (US 6040969).

Regarding claim 2 Lawrence in view of Kwak discloses the protective circuit of claim 1.

Lawrence in view of Kwak does not disclose further comprising: a first relay controlling at least one first switch, where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an abnormal state of the circuit disconnecting some or all of components of the neutral-ground voltage surge protection/filtration circuit where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit component.

Winch et al. further teaches comprising: a first relay (Fig. 4 element 34) controlling at least one first switch (Fig. 4 element T3, T4), where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an abnormal state of the circuit disconnecting some or all of components of the neutral-ground voltage surge protection/filtration circuit (LC filter described by Kwak) where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit (LC filter described by Kwak) component.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Lawrence in view of Kwak device with the Winch et al. teachings to provide improved attenuation of all continuous or repetitive common mode interference.

Regarding claim 3 Lawrence in view of Kwak discloses the protective circuit of claim 2.

Winch et al. further discloses a first switch connecting/disconnecting the neutral line (Fig. 4 elements T3, T4).

Regarding claim 16 Lawrence in view of Kwak discloses the protective circuit of claim 15.

Lawrence in view of Kwak does not disclose further comprising: a first relay controlling at least one first switch, where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an abnormal state of the circuit disconnecting some or all of components of the neutral-ground voltage surge protection/filtration circuit and where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit component.

Winch et al. further teaches comprising: a first relay (Fig. 4 element 34) controlling at least one first switch (Fig. 4 element T3, T4), where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an abnormal state of the circuit disconnecting some or all of components of the neutral-ground voltage surge protection/filtration circuit (Lawrence Fig. 2 elements 88, 98, 108, 106, 96) and where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit component.

Regarding claim 17 Lawrence in view of Kwak discloses the protective circuit of claim 16.

Winch et al. further discloses a first switch connecting/disconnecting the neutral line (Fig. 4 elements T3, T4).

Regarding claim 18 Lawrence in view of Kwak discloses the protective circuit of claim 15.

Winch et al. further teaches comprising: a first relay (Fig. 4 element 34) controlling at least one first switch (Fig. 4 element T3, T4), where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an abnormal state of the circuit disconnecting some or all of the components of the neutral-ground voltage surge protection/filtration circuit (Lawrence Fig. 2 elements 88, 98, 108,

106, 96) and where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit component (Lawrence Fig. 2 elements 88, 98, 108, 106, 96); a second relay (Fig. 4 element 34) controlling a second switch (Fig. 4 element T1, T2), where the second switch is in an opened condition when no current is flowing through the second relay corresponding to an abnormal state of the circuit causing the second switch to disconnect the hot-neutral voltage surge protection circuit (Fig. 4 element T1, T2) component and the hot-ground voltage surge protection circuit component and where the second switch is in a closed condition when current is flowing through the second relay corresponding to a normal state of the circuit causing the second switch to connect the hot-neutral voltage surge protection circuit component and the hot-ground voltage surge protection circuit component (combining the circuits of Fig. 6 & Fig. 9 all the different kind of protections can be achieved with the purpose of the highest reliability).

Regarding claim 19 Lawrence in view of Kwak discloses the protective circuit of claim 18.
Winch et al. further discloses a first switch connecting/disconnecting the neutral line (Fig. 4 elements T3, T4).

Regarding claim 20 Lawrence in view of Kwak discloses the protective circuit of claim 18.
Winch et al. further teaches wherein when the second switch (Fig. 4 element T1, T2) is in its opened condition, a utility part of the hot lead is disconnected from a device part of the hot lead protecting the device (Fig. 4 element T1, T2) and when the second switch is in its closed condition, then the utility part of the hot lead is connected to the device part of the hot lead (Fig. 4 element T1, T2).

Regarding claim 21 Lawrence in view of Kwak discloses the protective circuit of claim 18.
Winch et al. further discloses connecting/disconnecting the neutral with a first switch and connecting/disconnecting the hot line with the second switch (Fig. 4 element 62).

Regarding claim 22 Lawrence in view of Kwak discloses the protective circuit of claim 18.
Winch et al. further teaches comprising: a voltage threshold sensing circuit (Fig. 5 element 66) adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch (Fig. 5 element 30) for providing current to the relay circuit (Fig. 5 element 34); and an electronic switch (Fig. 5 element Q1, Q2) responsive to the voltage threshold sensing circuit for disabling the relay supply switch allowing the relays to transition between their closed and opened conditions.

Regarding claim 23 Lawrence in view of Kwak discloses the protective circuit of claim 18.
Winch et al. further teaches comprising: a voltage threshold sensing circuit (Fig. 5 element 66) adapted to detect when the voltage between the circuit hot and neutral leads exceeds a threshold value, a relay supply switch (Fig. 5 element 30) for providing current to the relay circuit (Fig. 5 element 34); and an electronic switch (Fig. 5 element Q1, Q2) responsive to the voltage threshold sensing circuit for disabling the relay supply switch allowing the relays to transition between their closed and opened conditions.

Regarding claim 24 Lawrence in view of Kwak discloses the protective circuit of claim 18.
Winch et al. further teaches comprising: a voltage threshold sensing circuit (Fig. 5 element 66) adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch (Fig. 5 element 30) for providing current to the relay circuit (Fig. 5 element 34); an electronic switch (Fig. 5 element Q1, Q2) responsive to the voltage threshold sensing circuit for disabling the relay supply allowing the relays

to transition between their closed and opened conditions when a connection between ground leads is disconnected.

Regarding claim 25 Lawrence in view of Kwak discloses the protective circuit of claim 18.
Winch et al. further teaches comprising: a voltage threshold sensing circuit adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch for providing current to the relay circuit; an electronic switch responsive to the voltage threshold sensing circuit for disabling the relay supply allowing the relays to transition between their closed and opened conditions when the connection between the hot and neutral lead is reversed (col. 4 lines 36-46)

Claim 4 is rejected under 35 U.S.C. §103(a) as being unpatentable over Lawrence (US 5179490) in view of Kwak (US 5475347) and Billingsley (US 5136455).

Regarding claim 4 Lawrence view of Kwak discloses the protective circuit of claim 1.
Lawrence in view of Kwak does not specifically discloses further comprising: a hot-neutral voltage surge protection/filtration circuit component adapted to substantially reduce noise between the hot and neutral ends and to clamp a voltage between the leads, and a hot-ground voltage surge protection circuit component adapted to substantially reduce noise between the hot and ground ends and to clamp a voltage between the leads.
Billingsley teaches comprising: a hot-neutral voltage surge protection/filtration circuit (Fig. 2) component adapted to substantially reduce noise between the hot and neutral ends and to clamp (col. 8 lines 15-19 & Fig. 2 elements 56, 60, 66, 68) a voltage between the leads, and a hot-ground voltage (Fig. 2) surge protection circuit component adapted to substantially reduce noise between the hot and ground ends and to clamp (col. 8 lines 15-19 & Fig. 3 elements 58, 60, 62, 64) a voltage between the leads.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Lawrence in view of Kwak device with the Billingsley teachings to provide efficient suppression of all types of transients in normal and common modes. This device also maintains its performance characteristics over a long period of time; it will not degrade in performance.

Claims 5, 6, 7, 8, 9, 10, 11, 12, 28, 29, 30 are rejected under 35 U.S.C. §103(a) as being unpatentable over Lawrence (US 5179490) in view of Kwak (US 5475347), Billingsley (US 5136455) and Winch et al. (US 6040969).

Regarding claim 5 Lawrence in view of Kwak and Billingsley discloses the protective circuit of claim 4.

Lawrence in view of Kwak and Billingsley does not specifically disclose comprising: a first relay controlling at least one first switch, where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an abnormal state of the circuit disconnecting some or all of components of the neutral-ground voltage surge protection/filtration circuit and where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit component; a second relay controlling a second switch, where the second switch is in an opened condition when no current is flowing through the second relay corresponding to an abnormal state of the circuit causing the second switch to disconnect the hot-neutral voltage surge protection circuit component and the hot-ground voltage surge protection circuit component and where the second switch is in a closed condition when current is flowing through the second relay corresponding to a normal state of the circuit causing the second switch to connect the hot-neutral voltage surge protection circuit component and the hot-ground voltage surge protection circuit component.

Winch et al. discloses further comprising: a first relay (Fig. 6 element 34) controlling at least one first switch (Fig. 6 element 32), where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an

abnormal state of the circuit disconnecting some or all of components of the neutral-ground voltage surge protection/filtration circuit (protection circuit described by Lawrence) and where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit component; a second relay (Fig. 8 element 34) controlling a second switch (Fig. 8 element 62), where the second switch is in an opened condition when no current is flowing through the second relay corresponding to an abnormal state of the circuit causing the second switch to disconnect the hot-neutral voltage surge (Billingsley Fig. 9 element 180), protection circuit component and the hot-ground (Billingsley Fig. 9 element 182) voltage surge protection circuit component and where the second switch is in a closed condition when current is flowing through the second relay corresponding to a normal state of the circuit causing the second switch to connect the hot-neutral voltage surge protection circuit component and the hot-ground voltage surge protection circuit component.
It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Lawrence, Kwak and Billingsley device with the Winch et al. device features to provide improved attenuation of all continuous or repetitive common mode interference.

Regarding claim 6 Lawrence in view of Kwak, Billingsley and Winch et al. discloses the protective circuit of claim 5.
Winch et al. further discloses a first switch connecting/disconnecting the neutral line (Fig. 4 elements T3, T4).

Regarding claim 7 Lawrence in view of Kwak, Billingsley and Winch et al. discloses the protective circuit of claim 5.
Winch et al. further discloses wherein when the second switch (Fig. 4 element T1, T2) is in its opened condition, a utility part of the hot lead is disconnected from a device part of the hot lead protecting the device and when the second switch is in its closed condition, then the utility part of the hot lead is connected to the device part of the hot lead.

Regarding claim 8 Lawrence in view of Kwak, Billingsley and Winch et al. discloses the protective circuit of claim 5.

Winch et al. further discloses connecting/disconnecting the neutral with a first switch and connecting/disconnecting the hot line with the second switch (Fig. 4 element 62).

Regarding claim 9 Lawrence in view of Kwak, Billingsley and Winch et al. discloses the protective circuit of claim 5.

Winch et al. further discloses further comprising: a voltage threshold sensing circuit adapted to detect when the voltage on the circuit hot lead exceeds a threshold value (Fig. 5 element 66), a relay supply switch (Fig. 5 element 30) for providing current to the relay circuit (Fig. 5 element 34); and an electronic switch (Fig. 5 elements Q1, Q2) responsive to the voltage threshold sensing circuit for disabling the relay supply switch allowing the relays to transition between their closed and opened conditions.

Regarding claim 10 Lawrence in view of Kwak, Billingsley and Winch et al. discloses the protective circuit of claim 5.

Winch et al. further discloses comprising: a voltage threshold sensing circuit (Fig. 5 element 66) adapted to detect when the voltage between the circuit hot and neutral leads exceeds a threshold value, a relay supply switch (Fig. 5 element 30) for providing current to the relay circuit (Fig. 5 element 34); and an electronic switch (Fig. 5 elements Q1, Q2) responsive to the voltage threshold sensing circuit for disabling the relay supply switch allowing the relays to transition between their closed and opened conditions.

Regarding claim 11 Lawrence in view of Kwak, Billingsley and Winch et al. discloses the protective circuit of claim 5.

Winch et al. further discloses comprising: a voltage threshold sensing circuit (Fig. 1 element 66) adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch for providing current to the relay circuit; an electronic switch (Fig. 5 elements Q1, Q2) responsive to the voltage threshold sensing

circuit for disabling the relay supply allowing the relays to transition between their closed and opened conditions when a connection between ground leads is disconnected.

Regarding claim 12 Lawrence in view of Kwak, Billingsley and Winch et al. discloses the protective circuit of claim 5.
Winch et al. further discloses comprising: a voltage threshold sensing circuit adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch for providing current to the relay circuit; an electronic switch responsive to the voltage threshold sensing circuit for disabling the relay supply allowing the relays to transition between their closed and opened conditions when the connection between the hot and neutral lead is reversed (col. 4 lines 36-46).

Regarding claim 28 Lawrence discloses a protective circuit having hot, neutral, and ground leads arranged to be placed between corresponding utility hot, neutral, and ground leads of a power utility outlet of a power distribution network and corresponding device hot, neutral, and ground leads of electrical and/or electronic devices, the protective circuit responding to abnormal power conditions incoming from the power utility outlet and reducing or eliminating ground noise or noise between the ground and neutral leads transmitted to the devices and reducing or eliminating ground leakage currents (Fig. 2).
Lawrence does not specifically disclose the protective circuit comprising: a neutral-ground voltage surge protection/filtration circuit component connected between the circuit neutral and circuit ground leads including at least one LC filter circuit component having at least one inductor disposed in the circuit ground lead, at least one capacitor connected between the circuit neutral and circuit ground leads after the inductor and a resistor (the resistor from Lawrence Fig. 2 elements 106, 108) adapted to discharge the capacitor, where the at least one the LC filter circuit component is adapted to reduce or eliminate round noise or noise between ground and neutral leads transmitted to the devices and to reduce or eliminate ground leakage currents.

Lawrence does not disclose a hot-neutral voltage surge protection circuit component connected between the circuit hot and neutral leads, a hot-ground voltage surge protection circuit component connected between the circuit hot and ground leads.
Lawrence does not disclose a first relay controlling at least one first switch, where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an abnormal state of the circuit disconnecting some or all of components of the neutral-ground voltage surge protection/filtration circuit and where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit component; and a second relay controlling a second switch, where the second switch is in an opened condition when no current is flowing through the second relay corresponding to an abnormal state of the circuit causing the second switch to disconnect the hot-neutral voltage surge protection circuit component and the hot-ground voltage surge protection circuit component, and where the second switch is in a closed condition when current is flowing through the second relay corresponding to a normal state of the circuit causing the second switch to connect the hot-neutral voltage surge protection circuit component and the hot-ground voltage surge protection circuit component.
Kwak teaches the protective circuit comprising: a neutral-ground voltage surge protection/filtration circuit component connected between the circuit neutral and circuit ground leads including at least one LC filter circuit component having at least one inductor disposed in the circuit ground lead, at least one capacitor connected between the circuit neutral and circuit ground leads after the inductor and a resistor (the resistor from Lawrence Fig. 2 elements 106, 108) adapted to discharge the capacitor, where the at least one the LC filter circuit component is adapted to reduce or eliminate round noise or noise between ground and neutral leads transmitted to the devices and to reduce or eliminate ground leakage currents (Abstract & Fig. 5).
Billingsley teaches a hot-neutral voltage surge protection circuit (Fig. 9 element 180) component connected between the circuit hot and neutral leads, a hot-ground voltage

surge protection circuit (Fig. 9 element 182) component connected between the circuit hot and ground leads.

Winch et al. teaches a first relay (Fig 6 element 34) controlling at least one first switch (Fig 6 element 32), where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an abnormal state of the circuit disconnecting some or all of components of the neutral-ground voltage surge protection/filtration circuit (Lawrence circuit described above) and where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit component; and a second relay (Fig 8 element 34) controlling a second switch (Fig 8 element 62), where the second switch is in an opened condition when no current is flowing through the second relay corresponding to an abnormal state of the circuit causing the second switch to disconnect the hot-neutral voltage surge protection circuit (Billingsley circuit described above) component and the hot-ground voltage surge protection circuit (Billingsley circuit described above) component, and where the second switch is in a closed condition when current is flowing through the second relay corresponding to a normal state of the circuit causing the second switch to connect the hot-neutral voltage surge protection circuit component and the hot-ground voltage surge protection circuit component.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lawrence device firstly with the Kwak teachings because it provides a noise filter which simplifies the connection structure of the ground inductor to associated lead wires (Col. 2 lines 5-9), secondly with the Billingsley device features to provide efficient suppression of all types of transients in normal and common modes. This device also maintains its performance characteristics over a long period of time; it will not degrade in performance, and thirdly with Winch et al. device features to provide improved attenuation of all continuous or repetitive common mode interference.

Regarding claim 29 Lawrence in view of Kwak, Billingsley and Winch et al. discloses the protective circuit of claim 28.
Winch et al. further teaches comprising: a voltage threshold sensing circuit (Fig. 1 element 30) adapted to detect when the voltage on the circuit hot lead (Fig. 1 element 12) exceeds a threshold value (Fig. 1 determined by voltage divider R1, R2); a relay supply switch (Fig. 1 element Q1, Q2) for providing current to the relay circuit (Fig. 1 element 34); and an electronic switch (Fig. 1 element D3, D4) responsive to the voltage threshold sensing circuit for disabling the relay supply switch allowing the relays to transition between their closed and opened conditions.

Regarding claim 30 Lawrence in view of Kwak, Billingsley and Winch et al. discloses the protective circuit of claim 28.
Winch et al. further teaches comprising: a voltage threshold sensing circuit (Fig. 1 element 30) adapted to detect when the voltage between the circuit hot and neutral leads (Fig. 1 element 12) exceeds a threshold value(Fig. 1 determined by voltage divider R1, R2), a relay supply switch (Fig. 1 element Q1, Q2) for providing current to the relay circuit, and an electronic switch (Fig. 1 element D3, D4) responsive to the voltage threshold sensing circuit for disabling the relay supply switch allowing the relays to transition between their closed and opened conditions.

Regarding claim 31 Lawrence in view of Kwak, Billingsley and Winch et al. discloses the protective circuit of claim 28.
Winch et al. further discloses comprising: a voltage threshold sensing circuit (Fig. 1 element 30) adapted to detect when the voltage on the circuit hot lead (Fig. 1 element 18) exceeds a threshold value (Fig. 1 determined by voltage divider R!, R2); a relay supply switch (Fig. 1 element Q1, Q2) for providing current to the relay circuit; an electronic switch responsive to the voltage threshold sensing circuit (Fig. 1 element D3, D4) for disabling the relay supply allowing the relays to transition between their closed and opened conditions when a connection between ground leads is disconnected.

Regarding claim 32 Lawrence in view of Kwak, Billingsley and Winch et al. discloses the protective circuit of claim 28.
Winch et al. further discloses comprising: a voltage threshold sensing circuit adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch for providing current to the relay circuit; an electronic switch responsive to the voltage threshold sensing circuit for disabling the relay supply allowing the relays to transition between their closed and opened conditions when the connection between the hot and neutral lead is reversed (col. 4 lines 36-46).

Regarding claim 34 Lawrence in view of Kwak, Billingsley and Winch et al. discloses the protective circuit of claim 28.
Lawrence further discloses wherein the neutral-ground voltage surge protection/filtration circuit component includes a resistor (Fig. 2 elements 96, 98).
Kwak further teaches a plurality of LC filter circuit component, each LC filter circuit including at least one inductor disposed in the circuit ground lead and at least one capacitor connected between the circuit neutral and circuit ground leads after the inductor, where the LC filter circuits are adapted to reduce or eliminate ground noise or noise between ground and neutral leads transmitted to the devices and to reduce or eliminate ground leakage currents (Abstract & Fig. 5).

Claims 13 & 26 is rejected under 35 U.S.C. §103(a) as being unpatentable over Lawrence (US 5179490) in view of Kwak (US 5475347) and Misencik et al. (US 5032946).

Regarding claim 13 Lawrence in view of Kwak discloses the protective circuit of claim 1.
Lawrence in view of Kwak does not specifically disclose comprising: a first indicator circuit for indicating a normal state, and a second indicator circuit for indicating an abnormal state.

Misencik et al. teaches further comprising: a first indicator circuit for indicating a normal state, and a second indicator circuit for indicating an abnormal state (abstract).
It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Lawrence in view of Kwak device with the Misencik et al. device features since is desirable to provide with an instant indication of the operation of the device, in other words a quick view of how the device is performing without the requirement of having to test it with a multimeter or other measurement device.

Regarding claim 26 Lawrence in view of Kwak discloses the protective circuit of claim 15.
Lawrence in view of Kwak does not specifically disclose further comprising: a first indicator circuit for indicating a normal state, and a second indicator circuit for indicating an abnormal state.
Misencik et al. further discloses comprising: a first indicator circuit for indicating a normal state, and a second indicator circuit for indicating an abnormal state (abstract).

Claim 33 is rejected under 35 U.S.C. §103(a) as being unpatentable over Lawrence (US 5179490) in view of Kwak (US 5475347), Billingsley (US 5136455), Winch et al. (US 6040969) and Misencik et al. (US 5032946).

Regarding claim 33 Lawrence in view of Kwak, Billingsley and Winch et al. discloses the protective circuit of claim 28.
Lawrence in view of Kwak, Billingsley and Winch et al. does not specifically disclose further comprising: a first indicator circuit for indicating a normal state and a second indicator circuit for indicating an abnormal state.
Misencik et al. teaches further comprising: a first indicator circuit for indicating a normal state, and a second indicator circuit for indicating an abnormal state (abstract).
It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Lawrence in view of Kwak, Billingsley device with the Misencik et al. teachings since is desirable to provide with an instant indication of the operation of

the device, in other words a quick view of how the device is performing without the requirement of having to test it with a multimeter or other measurement device.

Response to Arguments

Applicant's arguments filed 08/02/06 have been fully considered but they are not persuasive.

1. The examiner wants to notice that filtering RFI and filtering surge may both be accomplished with the same type of filters (LC).
The difference would be in the physical characteristics of the particular elements that form the passive filter since they work in a different range of frequencies.
Lawrence (US 5179490) has L and C components that operate as filters.

2. The examiner incorporated a new reference that teaches more specifically the filtering of transients and ground noise, Kwak (US 5475347).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luis E. Román whose telephone number is 571-272-5527. The examiner can normally be reached on Mon – Fri from 7:15 AM to 3:45 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 571-272-2800 x 36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from Patent Application Information Retrieval (PAIR) system.

Status information for unpublished applications is available through private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Luis E. Román
Patent Examiner
Art Unit 2836

LR/101706

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